

Original Research Article

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26

SMOKING PREVALENCE AND KNOWLEDGE ABOUT ITS HEALTH

IMPLICATIONS AMONG HEALTH CARE PROFESSIONAL STUDENTS IN EKITI

STATE, SOUTH-WESTERN NIGERIA

ABSTRACT

Aims:

This study examined smoking prevalence and knowledge about its health implications among health care professional students in Ekiti State, South-Western Nigeria.

Theoretical framework:

The Precede-Proceed Model was the theoretical framework for the study.

Methodology:

The research design for the study was quantitative. The sample size was determined using the rule of thumb. Simple random sampling technique was used in choosing the participants and sampling techniques was purposive and convenience. Self-developed questionnaire was the instrument used for data gathering. Data from the study was analyzed using both descriptive and inferential statistics.

Results:

The findings revealed that 21.6% of the participants have ever smoked cigarette and the majority (77.3%) smoked daily while 89.7% of the participants indicated that they smoked less than 10 cigarettes stick a day and 6.9% smoked more than 30 sticks daily. One-third (34.4%) of the participants commenced smoking between the age of 18 to 21 years while 27.6% between age 16 to 17 years. Almost half (45.2%) of the participants were introduced to cigarette smoking by their peers. The majority (55.0%) of the participants took their cigarette from friends while 35.0% normally bought from the shops. Almost all (99.1%) of the participants were aware of the health risks that are associated with cigarette smoking,

27 almost all (99.1%) and 81.8% of the participants indicated lung cancer while the remaining
28 18.2% highlighted cancer of the bladder. Also, 93.6% indicated that there was no tobacco
29 treatment centre in their institution.

30 **Conclusion:**

31 The study recommended that Nurses and Midwives should ensure that comprehensive
32 individual and group education is done in the clinics and during school health visits, to
33 increase adolescents' knowledge regarding the health effect of cigarette smoking.

34 **Key words:** knowledge, smoking prevalence, health effects,

35

36 **INTRODUCTION**

37 Globally, between 82,000 and 99,000 young people start smoking everyday [1]. Smoking can
38 cause many health effects including various types of cancers, cardiovascular disease as well
39 as respiratory disease, and it can also impose a significant financial and social burden on the
40 society. Therefore smoking prevention remains an important public health concern [1].
41 Tobacco smoking is one of the leading causes of diseases and death, between 1950 and 2000
42 approximately 70 million people died from tobacco use [2]. The tobacco smoke contains
43 nicotine and harmane which is a monoamine oxidase (MAO) inhibitor, and the combination
44 of both result in addictive stimulant and euphoriant properties [2].

45 Cigarette smoke is a complex mixture of chemicals produced by burning tobacco and the
46 additives, it contains tar, which has more than 4,000 chemicals and many of these chemicals
47 are known to cause cancer. Thus, cigarette smoking can result in many fatal respiratory
48 disorders such as chronic obstructive lung disease (emphysema and chronic bronchitis),
49 ischemic heart disease, and various types of cancers such as lung, bladder, upper respiratory
50 tract and pancreas [3].

51 Globally, during the last two decades cigarette production has increased at an average of
52 2.2% each year, out spacing the population growth rate of 1.7% [2]. The prevalence of
53 smoking in Nigeria is reported to be 8.9% in the general population [2]. However, the
54 distribution of smoking is not the same across all strata of the society. It varies from 7.7%
55 among female secondary schools, 17.1% among secondary school students, 17.7% among
56 health professional students, and 37.9% among the general population in northern part of the
57 country [4].

58 Health-care professionals represent an important part of the population as they are the care
59 providers, who are expected to advance the anti-smoke message to the general public [2].
60 Therefore, health care providers who indulge in smoking are regarded as poor example of
61 people who are promoting positive health behaviours and they have the potential to
62 unintentionally affect the smoking behaviours of others through modelling. It was estimated
63 that about 70% of smokers visit physicians each year with substantial opportunity to
64 influence smoking behaviour. Medical advice to quit smoking can produces a year abstinence
65 rate of up to 5-10%, which would have a significant public health impact if it were provided.
66 However, there are many barriers that are responsible for the reduction in the effectiveness or
67 willingness of health care professionals to provide patient counselling and they include, time
68 constraints during consultation as well as the smoking status of the health care professional
69 [1].

70 It was reported that smoking is a real problem among medical students irrespective of the
71 level in which they are enrolled [5]. Smoking often starts in early adolescence and addiction
72 can occur rapidly [1]. Smoking is socially patterned, with high smoking prevalence among
73 people of low socio-economic status; smoking is the leading cause of health inequalities.
74 Addressing inequalities in tobacco use is therefore a public health priority [1]. The health
75 consequences of cigarette smoking can be slow, gradual, or cumulative. Tobacco smoke is

76 mild enough to be inhaled in an overdose quantities and its addiction has historically been
77 one of the hardest addictions to break. Although the hazards of smoking are well-known, the
78 number of smokers among adolescent students is still high. Factors influencing adolescent
79 students to smoke include their socio-economic status, the environment and having parents,
80 siblings or friends who smoke [1, 6].

81 The adverse effect of tobacco smoking on health has been established and on an average,
82 cigarette smokers die ten years younger than non-smokers [7]. There is increasing evidence
83 that contact with smokers, particularly family members increases ones risk of smoking.
84 Moreover, the health impact of smoking will be more among adolescents of today due to the
85 early initiation of smoking as well as in the case of adolescents who smoke during adulthood
86 and adolescents who have become habitual smokers due to long term use and these
87 adolescents are more likely to develop cancer and cardiovascular diseases [7].

88 Efforts to delay or prevent children from smoking is necessary because the earlier a child
89 starts to smoke the less likely they are to quit the habit as adult, and the more likely such a
90 person dies prematurely from smoking related diseases [1]. Ebirim et al, [6] stated that
91 despite the growing problem of global cigarette use, accurate information on the prevalence
92 as well as the pattern among Nigerian adolescents remains sparse. Hence, the study seeks to
93 assess the knowledge of medical students towards the health implications of tobacco smoking
94 and to determine the prevalence and their attitude towards tobacco smoking. The findings of
95 the study will depict the factors predisposing medical students towards smoking and also
96 create awareness in promoting attitudinal change towards tobacco smoking.

97 **Theoretical framework**

98 The Precede-Proceed Model [8] was the theoretical framework for the study. Precede-
99 Proceed model provides a comprehensive structure for assessing health and quality-of-life. It
100 was proposed in 1974 by Dr. Lawrence W. Green, it is a cost-benefit evaluation framework

101 that that can help health program planners, policy makers, and other evaluators to analyze
102 situations and design health programs efficiently [8]. The theory was used to assess health
103 related behaviours and environments that affect health and quality of life. The framework has
104 two components. The set of phases consists of series of planned assessments that generate
105 information that can be used to guide subsequent decision.

106

107 Precede is an acronym for predisposing, reinforcing, enabling, constructs in educational
108 diagnosis and evaluation. It consists of three phases, the first phase, social assessment and
109 situational analysis which concern quality of life or social problem determination as well as
110 the needs of a given population. The second phase is epidemiological assessment to identify
111 health determinants of these problems and it also involves analysing the behaviour and
112 environmental factors that link to the health problems. Educational and ecological assessment
113 is the third phase; it involves the causal factors influencing health behaviours or
114 environmental factors. These factors are grouped into three: predispose, reinforce, and enable
115 factors [9].

116

117 The second component is referred to as proceed for policy, regulatory, and organizational
118 constructs in educational and environmental development (phase 4, 5, and 6). These three
119 phases involve the strategic implementation of multiple actions based on the findings from
120 assessment in the initial phase. Precede-Proceed model provides a continuous series of phases
121 in planning, implementation, and evaluation [9]. Figure 1 illustrates a diagram explains the
122 Precede-Proceed model;

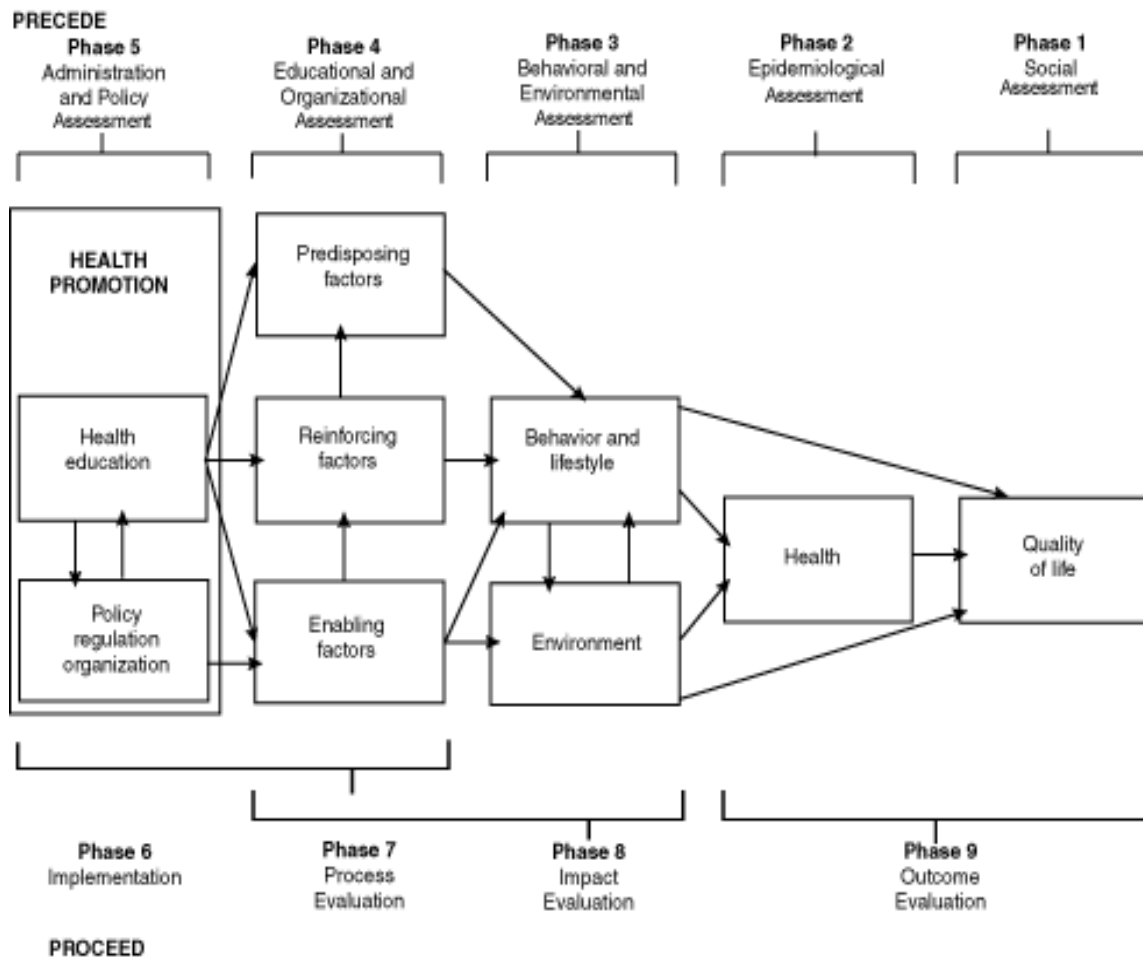


Fig. 1: The Precede-Proceed Model (Green & Keuter, 2005)

123

124

125

126 In application of this theory to this study, this study focuses on smoking among adolescents.

127 In order to understand the influencing factors for smoking among health professional

128 students, it will be important to develop anti-smoking public health programs. This study will

129 only address the third phase of the Precede-Proceed Model. This particular phase assesses the

130 cause of health behaviour (smoking). This phase was used to identify the three important

131 factors that play important roles in changing a person's behaviour as well as the environment.

132 These factors are predisposing factors, enabling factors, and reinforcing factors.

133 The predisposing factors are antecedents to behaviour change that provide the motivation for

134 the behaviour. They include individual or population knowledge, attitudes, belief, and

135 perceptions that facilitate or hinder motivation for change [9]. Enabling factors are
136 antecedents to behaviour or environment change that allow a motivational or environment
137 policy to be realized. It includes accessibility, availability, skills and laws that can help or
138 hinder the behavioral changes along with the environmental factors [9]. This study explores
139 the accessibility to cigarettes and peer smoking as enabling factors. Reinforcing factors are
140 factors following behaviour that provide the continuing reward or punishment as a
141 consequence of behaviour. It consists of social support, peers influence, advice and feedback
142 by health care providers.

143

144 In conclusion, the Precede-Proceed model is a participatory model for creating successful
145 community health promotion and other public health interventions. It is a multi-assumptions
146 model for intervention for health behaviour change. It is based on the premise that behaviour
147 changes are voluntary, and that health programs are more likely to be effective if they are
148 planned and evaluated. Identification of these factors may be useful to provide interventions
149 required towards behaviour change as the outcome and to conduct prevention and control
150 measures of smoking among medical students.

151

152 **METHODOLOGY**

153 This research is a descriptive study aimed at finding out the knowledge of medical students
154 about the health effects of smoking in the university. The study was conducted in Afe
155 Babalola University, Ado-ekiti, Ekiti State Nigeria. The total number of students in the
156 College of Medicine and Health Sciences of Afe Babalola University was about 1,600, since
157 the target population of this research was limited to students in the Department of Medicine,
158 Nursing Science and Medical Laboratory Science, the population was reduced to 506. The
159 sample size was determined using the rule of thumb, therefore, 24% of the target population,

160 which is 120 students was selected for the study. The simple random sampling technique was
161 used in choosing the participants. The sampling techniques was purposive and convenience.
162 Self-developed questionnaire was the instrument used for data gathering. The questionnaire
163 has two sections. Section A investigated the demographic characteristics of the participants.
164 Section B was on questions that sought to assess the knowledge of medical students towards
165 the health implications of tobacco smoking and to determine the prevalence and their attitude
166 towards tobacco smoking. The reliability of the questionnaire was done using the test-retest
167 method.

168

169 The research proposal was approved by the Department of Nursing Science, Afe Babalola
170 University, Ado-Ekiti. Before the commencement of the study, approvals were obtained from
171 The Research Ethics Committee of Afe Babalola University. Written and verbal informed
172 consent was sought and obtained from participants before administration of the questionnaire.
173 Participation was made voluntary without coercion, manipulation or undue inducement. The
174 participants were told that they could freely withdraw at any point during the study process.
175 The researcher administered the questionnaire to the participants. The questionnaires were
176 retrieved from the participants immediately after completion. There were 120 students
177 recruited for the study out of which 111 responded adequately to the questionnaire. Data
178 gathering was from August to September 2015. Data from the study was analyzed using both
179 descriptive and inferential statistics.

180

181 **RESULTS**

182 The analysis of the socio-demographic status of the participants (Table 1), the majority
183 (81.1%) of the participants were female while 18.9% were males. Table 1 established that the
184 majority 78.4% of the participants were 18-21 years of age while only 1.8% was age 22-25

185 years old. With regards to participant's religion, 87.3% were Christians while 12.7% were
186 Muslims. Almost all (99.1%) the participants were single and the majority (57.7%) were in
187 their 4th year. Participants were asked about their monthly allowance and more than half
188 (55.8%) of the participants received between N10, 000 to N30, 000 while only 5.8% received
189 above N100, 000.

190

191 As shown in Table 2, 73.9% of the participants have never smoked a cigarette before, while
192 26.1% of the participants responded positively. With regards to participants frequent of
193 smoking, the majority (77.3%) smoked daily while only 3.4% indicated that they smoked
194 every week. When the participants were also asked to indicate the number of cigarette that
195 they smoke daily, the majority (89.7%) of the participants indicated that they smoke less than
196 10 cigarettes stick a day while 6.9% smoked more than 30 sticks a day.

197

198 With respect to participants age at smoking initiation, about one-third (34.4%) of the
199 participants commenced smoking between aged 18 to 21 years, 27.6% between age 16 to 17
200 years and 31.1 started smoking above the age of 21 years. When asked about the person that
201 introduced them to smoking, almost half (45.2%) of the participants indicated peer group,
202 16.1% and 9.7% indicated boyfriend and girlfriend respectively while 25.8% said it was their
203 personal choice. With regards to question on what predisposes the participants to smoking,
204 the majority (77.4%) of them stated that they started smoking because of fun, 12.9% was due
205 to peer pressure, while 6.5% indicated stress as what predisposed them to smoking.

206

207 On the participants' attitudes towards smoking, as revealed Table 3, when the participants
208 were asked if they will smoke a cigarette offered by their best friend, the majority (63.6%) of
209 them indicated definitely not, 12.1% answered probably not and 15.9% indicated probably

210 yes while 8.4% answered definitely yes. With regards to participants probability of smoking
211 in the next 12 months, more than half (65.1%) of the participants indicated definitely not,
212 13.8% probably not, 11.9% probably yes and 9.2% indicated definitely yes.

213 As revealed in Table 4, participants were asked if they have ever tried to stop smoking in the
214 past year and more than half (52.2%) highlighted yes while the remaining 47.8% indicated
215 no. When the participants were asked how they usually obtain their cigarette, the majority
216 (55.0%) of the participants got their cigarette supply from friends while 35.0% indicated that
217 they normally buy from the shops.

218 As shown in Table 5, participants were asked if they are aware that smoking is dangerous to
219 their health and almost all (99.1%) of the participants indicated yes with exception of only
220 one (0.9%) participants who indicated no. In addition, when the participants were asked if
221 they are aware of the health risks that are associated with cigarette smoking, almost all
222 (99.1%) of the participants indicated yes with exception of only one (0.9%) participants who
223 indicated no. On the participants' knowledge on the health impacts of smoking, the majority
224 (81.8%) of them indicated lung cancer while the remaining 18.2% highlighted cancer of the
225 bladder.

226

227 When the participants were asked if they know the benefit of smoking cessation and the
228 majority (65.4%) of the participants indicated yes while the remaining 34.6% indicated no.

229 Almost all (93.6%) of the participants indicated the absence of a tobacco treatment centre in
230 their institution.

231 Table 6 shows that 40.2% of the participants strongly agreed that smokers are more popular
232 while 22.3% strongly disagreed. Also, 35.7% of the participants strongly agreed that smoking
233 helps people forget their worries and 26.8% disagreed. 27.7% of the participants strongly
234 agreed that non-smokers dislike being around people who smoke while 17.9% strongly

235 disagreed. Almost half (44.6%) of the participants strongly disagreed that smokers find it
236 hard to get dates while 13.4% strongly agreed. More than half (53.6%) of the participants
237 strongly disagreed that smoking is something you need to try before deciding to do it or not,
238 17.9% agreed, 17.9% strongly agreed, while 8.9% disagreed. Almost half (44.6%) of the
239 participants strongly disagreed that there was no harm in having a cigarette while 13.4%
240 agreed. Almost half (44.6%) of the participants strongly disagreed that smoking helps people
241 to relax, 26.8% disagreed, and 8.9% strongly agreed. About one third (34.8%) of the
242 participants disagreed that smoking makes people look sexy while 27.7% strongly disagreed.
243 The majority (53.6%) of the participants strongly disagreed that smoking is enjoyable while
244 37.5% disagreed. More than half (55%) of the participants strongly agreed that smokers are
245 often stressed while 31.3% agreed. And lastly, the majority (62.5%) of the participants
246 strongly agreed that non-smokers should be proud to be smoke free, 11.6% agreed, 15.1%
247 strongly disagreed, while only 10.7% disagreed. A total of 71.4% of the participants indicated
248 that they will prefer a smoke-free institution.

249 SA and SD represent 'strongly agree' and 'strongly disagree', respectively. Participants were
250 asked to tick which of the option was applicable to them.

251 **DISCUSSION**

252 In this study, about one-third (34.4%) of the participants commenced smoking between the
253 age of 18 to 21 years and 27.6% of the participants were between age 16 to 17 years.
254 According to Ebirim et al. [6], the prevalence of ever smoked adolescents was 15.3% and
255 11.2% for current smokers according to a study conducted using adolescents in Owerri
256 South-Eastern Nigeria. Similarly in this study, 26.1% of the participants do smoked
257 cigarettes and the majority (77.3%) smoked daily. Likewise 89.7% of the participants smoked
258 less than 10 cigarettes stick a day while 6.9% smoked more than 30 sticks daily.

259 Several smoking surveys have revealed a decline in current cigarette smoking among adults
260 far more prominent among boys than girls. After an initial rise among teenage boys, a decline
261 in cigarette smoking has occurred. This has not been the case with teenage girls, who showed
262 a continuous increase in proportional smoking. Both males and females Nigerians are
263 initiating smoking at earlier ages, among adolescents, male consumption of cigarettes per day
264 has plateaued during the past 5 years, but some increases are noted for females. A study
265 showed that students between aged 16 years and above have 2.4 times higher risk of
266 smoking, compared to aged 13 years [10]. Another study revealed that the students
267 commenced smoking between 15 to 22 years, more than two thirds (71%) of smokers were in
268 the age group less than 18 years [11].

269

270 Krosnick and Judd [12] stated that a common term in life-span developmental psychology of
271 young adults is a decrease in parental influence on the child and an increase in peer influence.
272 Peer smoking is an important factor that can influence smoking in young adults. A study by
273 Krosnick and Judd [12] found that peer smoking correlates with adolescent cigarette smoking
274 and usually accounts for more of the variance in adolescent smoking than any other variable.
275 This is consistent with the study as 45.2% of the participants agreed that peer pressure was a
276 factor that influences them to smoking also 16.1% and 9.7% specified boyfriend and
277 girlfriend respectively while only 25.8% said it was their personal choice. Merdad, Al-
278 Zahrani and Farsi [13] also documented that both parental and peer smoking factors were
279 important predictors of smoking. In this study, the majority (63.6%) of the participants will
280 smoke a cigarette offered by their best friend and 65.1% will probability smoke within the
281 next 12 months.

282 Cigarette accessibility is the gateway for all risk factors that contribute to smoking in
283 adolescents; the higher perceived accessibility increases the risk of smoking among

284 adolescents. The study by Gilpin, Lee and Pearce [14] indicated that adolescents who
285 perceived at baseline that cigarettes were easy to get were more likely to smoke. High
286 prevalence of smoking among students may be relate to their accessibility to cigarettes, easy
287 accessibility of cigarettes and tobacco products and lack of legislation prohibiting sale of
288 tobacco to minors also increase the possibility of students to smoke [10]. In a study by
289 Martini and Sulistyowati [15], on factors relating to cigarette smoking behaviour in Adison
290 port, Saraburin Province in Indonesia, it was reported that the convenience for buying
291 cigarette and getting cigarette from others were associated with smoking behaviour. Overall,
292 accessibility to cigarettes is a very important factor related to smoking among college
293 students, they are more likely to smoke with their friends. This is in consistence with this
294 study as the majority (55.0%) of the participants gets their cigarette supply from friends while
295 35.0% indicated that they normally buy from the shops.

296 From the study it shows that majority of the participants have high knowledge that about the
297 health effects of tobacco smoking. Almost all (99.1%) of the participants are aware that
298 smoking is dangerous to their health and also aware of the health risks that are associated
299 with cigarette smoking and 81.8% indicated lung cancer while the remaining 18.2%
300 highlighted cancer of the bladder. Also majority of them knew that lung cancer is associated
301 with cigarette smoking, furthermore, majority of them agreed that cigarette smoking is
302 implicated in heart disease. This showed that the adolescents were conversant with these
303 health problems that result from smoking cigarettes [6]. Majority of the students had good
304 knowledge of the various health problems associated with cigarette smoking. This is probably
305 due to the fact that many of them have been educated in school about these harmful effects.
306 There are other health effects of smoking among adolescents, these include coughing,
307 respiratory infections, increase heart rate, high blood pressure, increase stomach acid,
308 decrease blood and oxygen supply and low appetite. There are also cosmetic effects and

309 premature ageing of skin, yellow-grey complexion, stains fingers and nails [16]. Smoking
310 may lead to coughs and worsen respiratory diseases among young people. Adolescent
311 smokers experience shortness of breath at higher rates compared to non-smoking adolescents
312 and produce phlegm more often than those who do not smoke [17].
313 The majority (65.4%) of the participants in this study knew the benefit of smoking cessation.
314 According to Fuller [18], there were some gender differences in knowledge and attitudes,
315 with boys more likely to agree with the positive statements about smoking; that smoking
316 helps people relax if they are stressed, that smoking is not dangerous if you do not smoke a
317 lot and that smoking helps people cope with life. In the study, 8.9% of the participants
318 strongly agreed that smoking helps in relaxation. Also there were also differences by age,
319 with younger participants more likely to think that smoking is not dangerous if you do not
320 smoke a lot while older participants were more likely to agree with the statements that
321 smoking helps people to relax, that smokers stay slimmer than non-smokers, that smoking
322 gives people confidence and that smoking helps people cope [18]. This may be a result of
323 increasing personal experience with smoking and smokers were found to agree more with
324 positive statements and less with negative statements than non-smokers [18]. Parrott [19]
325 carried out a research on the topic that most smokers have stressful feeling more than non-
326 smokers, and adolescent smokers believe that increasing levels of stress as they develop
327 regular patterns of smoking. That means smoking can be caused as a result of stress that
328 occurs in an individual. According to WHO, it can also result to social effects due to peer
329 pressure and as a result it could lead to financial burdens for them and their families.

330

331 **CONCLUSION**

332 Smoking is one of most important health problems in the world. Smoking overuse results in
333 serious consequences for the community health and the society as a whole. The major

334 impacts on health are physically, psychologically, socially and economically due to smoking
335 [20]. There is an increasing prevalence of cigarette smoking among adolescents. The result of
336 the study revealed that some of the students have attempted to stop smoking but a tobacco
337 treatment centre was not available within the institution, this should be addressed because it
338 could assist in the reduction of smoking prevalence among adolescents and young adults.
339 There is no safe level of exposure to second-hand tobacco smoke because it causes more than
340 600,000 deaths yearly. Every person should be able to breathe tobacco smoke-free air.
341 Smoke-free laws protect the health of non-smokers, do not harm business and it encourages
342 smokers to quit. Over 1.3 billion people or 18.0% of the world's population are protected by
343 comprehensive national smoke free laws.

344

345 **RECOMMENDATIONS FOR NURSING PRACTICE AND LIMITATION**

346 From the findings of this study, it is recommended that a comprehensive individual and group
347 education should be done in the clinics and during school health visits, to increase
348 adolescents' knowledge regarding the health effect of cigarette smoking. Also, emphasis
349 should be placed on the consequences of smoking in the presence of children during adult
350 health education.

351 In addition, nurses should create more awareness on cigarette smoking and this can be
352 disseminated properly through seminars, conferences and workshops. They should also
353 promote tobacco control activities like smoking cessation strategies, smoking cessation
354 therapies and smoking prevention programs to students.

355

356 Besides, the government should provide facilities like a tobacco treatment centre in the
357 communities and schools to aid in treatment of addictions and other illnesses. The
358 government should also provide advocates to create health volunteers in the community by

359 training them on how to motivate smokers to quit smoking, how to promote healthy lifestyles,
360 and how to maintain smoke-free lifestyles.

361

362 It is also important for the government to have measures in protecting non-smokers from
363 environmental tobacco smoke while training should be provided to all health-care providers
364 at primary care, community and national level to enable them to effectively deliver smoking
365 cessation interventions and treatment.

366

367 The limitation for the study was the purposive and convenient sample of health professional
368 students in Afe Babalola University, Ado-Ekiti. Hence the results are not generalizable to a
369 larger context.

370 **ACKNOWLEDGEMENT**

371 The authors are grateful to the Management and Ethics Committee of Afe Babalola
372 University, Ado-Ekiti for granting the permission to conduct the study and every student who
373 participated in the study.

374

375 **COMPETING INTEREST**

376 Conflict of interest- None

377 **AUTHOR'S CONTRIBUTIONS**

378 Author OA designed the study, performed the statistical analysis and writes the manuscript.

379 Author EF, helped in the study design and data collection, both authors read and approved the
380 final manuscript.

381

382

383

384

385 **REFERENCES**

- 386 1. McGee CE, Trigwell J, Fairclough SJ, Murphy RC. Influence of family and friend
387 smoking on intentions to smoke and smoking-related attitude: a cross sectional study.
388 BMC Public Health. 2014;15:225.
- 389 2. Awopeju O, Erhabor G, Awosusi B, Irabor I. Smoking prevalence and attitudes
390 regarding its control among health professional students in South-western Nigeria.
391 Ann Med Health Sci. 2012;355-60.
- 392 3. Desalu OO, Olokoba A, Danburam F, Salawu M, Batulu IM. Second hand smoke
393 exposure among non-smoking adults in two Nigerian cities. Department of Medicine,
394 University of Ilorin Teaching Hospital, Ilorin, Nigeria. Annals of African medicine.
395 2011;10:103-11.
- 396 4. Irabor DO. Ethnic differences in colon and rectal cancer incidence in Nigeria: a case
397 of dietary determinants. Ann Nig. Med. 2012;6:71-74.
- 398 5. Abdalla A, Raat H. Effects of tobacco smoking advertisements on smoking habits
399 among adolescents in Saudi Arabia. Med J. Cairo Univ. 2012;80:111-119.
- 400 6. Ebirim CIC, Amadi AN, Abanobi OC, Iloh GUP. The prevalence of cigarette
401 smoking and knowledge of its health implications among adolescents in Owerri,
402 South-Eastern Nigeria. Health. 2014;6:1532-1538.
- 403 7. Ferrante M, Saulle R, Ledda C. Prevalence of smoking habits, attitudes, knowledge
404 and beliefs among Health Professional students: a cross-sectional study. Ann 1st Super
405 Sanita. 2013;49:143-149.
- 406 8. Green LW. Toward cost-benefit evaluations of health education: Some concepts,
407 methods and examples. Health Edu. Monographs. 1974;2:34-64.
- 408 9. Green L, Kreuter M. Health program planning: An educational and ecological
409 approach. New York:McGraw-Hill, 2005.

- 410 10. Rahman M, Ahmad S A, Karim J, Chia H. A. Determinants of smoking behaviour
411 among secondary school students in Bangladesh. *Journal of Comm. Health.* 2011;36:
412 831–838.
- 413 11. Tarafdar MMA, Nahar S, Rahman M, Hussain SMA, Zaki M. Prevalence and
414 determinants of smoking among the college students, in selected district of
415 Bangladesh. *Bangladesh Med. Journal.* 2009;38:7-12.
- 416 12. Krosnick JA, Judd CM. Transitions in social influence at adolescence: Who induces
417 cigarette smoking? *Developmental Psychology.* 1982;18:359-368.
- 418 13. Merdad LA, Al-Zahrani MS, Farsi JMA. Smoking habits among Saudi female
419 university students: Prevalence, influencing factors and risk awareness. *Annals of*
420 *Saudi Med.* 2007; 27: 366-368.
- 421 14. Gilpin EA, Lee L, Pierce JP. Does adolescent perception of difficulty in getting
422 cigarettes deter experimentation? *Preventive Medicine.* 2004;38:485- 491.
- 423 15. Martini S, Sulistyowati M. The determinants of smoking behavior among teenagers in
424 East Java Province, Indonesia [Online]. Available from www.worldbank.org/hnp and
425 www.worldbank.org/tobacco [Assessed on: 20/10/2015].
- 426 16. Schane RE, Pamela M, Ling PM, Glantz SA. Health effects of light and intermittent
427 smoking a review. *Journal of the American Heart Asso.* 2010;121:1518-1522.
- 428 17. Appau IK. Smoking habits among adolescents. Bachelor's thesis, Faculty of Applied
429 sciences, Turku University. 2011.
- 430 18. Fuller E. Smoking, drinking and drug use among young people in England in 2010.
431 Health and Social Care Information Centre. 2011.
- 432 19. Parrott AC. Does cigarette smoking cause stress? *The American Psychologist.* 2011;
433 54:817–820.

434 20. World Health Organisation (WHO). WHO Report on the Global Tobacco Epidemic.
 435 Geneva:Switzerland, 2011.

436

437 **Table 1: Demographic profile of participants (N=111)**

Socio demographic characteristics	Number	%
Gender		
Male	21	18.9
Female	90	81.1
Age		
14 – 17	2	1.8
18 – 21	87	78.4
22 – 25	20	18.0
26 – 30	2	1.8
Marital status		
Single	110	99.1
Married	1	.9
Religion		
Christianity	96	87.3
Islam	14	12.7
Level of degree		
Second year	2	1.8
Third year	11	9.9
Fourth year	64	57.7
Fifth year	34	30.6
Monthly income		
N10000 – N30000	58	55.8
N40000 – N60000	33	31.7
N70000 - N100000	7	6.7
Above N100000	6	5.8

438

439 **Table 2: Predisposing factors to smoking as indicated by the participants**

Options	Number	%
Have you ever smoked?		
Yes	29	26.1
No	82	73.9
Total	111	100
How often do you smoke?		
Daily	23	77.3
Weekly	6	22.7
Total	29	100
Number of cigarette smoked daily		
Less than 10	26	89.7
11 – 20	1	3.4

Above 20	2	6.9
Total	29	100
Age of smoking initiation		
12 – 15 years	2	6.9
16 – 17	8	27.6
18 – 21	10	34.4
Above 21 years	9	31.1
Total	29	100
Who introduce you to smoking?		
Peer group	14	45.2
Boyfriend	5	16.1
Girlfriend	3	9.7
Relations	1	3.2
Personal choice	8	25.8
Total	29	100
What led you to smoking?		
Stress	2	6.5
Peer pressure	4	12.9
Fun	24	77.4
Other reasons	1	3.2
Total	29	100

440

441

442

Table 3: Attitudes towards smoking

Options	Number	%
Will you smoke a cigarette offer by your friend?		
Definitely not	68	63.6
Probably not	13	12.1
Probably yes	17	15.9
Definitely yes	9	8.4
Total	107	100
Probability of smoking in the next 12 months		
Definitely not	71	65.1
Probably not	15	13.8
Probably yes	13	11.9
Definitely yes	10	9.2
Total	109	100

443

444

Table 4: Participants' quitting attempts and access to smoking

Options	Number	%
Quitting attempts		
Yes	12	52.2
No	11	47.8
Total	23	100

Access to cigarette		
From the shop	7	35.0
From friends	11	55.0
Others	2	10.0
Total	20	100

445

446

Table 5: Participants' knowledge of the danger of smoking

Options	Number	%
Do you know that smoking is dangerous to your health?		
Yes	110	99.1
No	1	0.9
Total	111	100
Awareness of the health risks associated with smoking		
Yes	110	99.1
No	1	0.9
Total	111	100
Benefit of smoking cessation		
Yes	68	65.4
No	36	34.6
Total	104	100
Smoking cessation and treatment center		
Yes	7	6.4
No	102	93.6
Total	109	100

447

448

Table 6: Participants' attitude towards smoking

S/N	ITEMS	SA	%	Agree	%	SD	%	Disagree	%
1	Smokers are more popular.	45	40.2	15	13.4	25	22.3	25	22.3
2	Smoking helps people forget their worries.	40	35.7	15	13.4	25	22.3	30	26.8
3	Non-smokers dislike being around people who smoke.	31	27.7	29	25.9	20	17.9	30	26.8
4	Smokers find it hard to get dates.	15	13.4	25	22.3	50	44.6	20	17.9
5	Smoking is something you need to try before deciding to do it or not.	20	17.9	20	17.9	60	53.6	10	8.9
6	There is no harm in having a cigarette.	25	22.3	15	13.4	50	44.6	20	17.9
7	Smoking helps people relax.	10	8.9	20	17.9	50	44.6	30	26.8
8	Smoking makes people look sexy.	10	8.9	30	26.8	31	27.7	39	26.6
9	Smoking is enjoyable.	5	4.5	5	4.5	60	53.6	42	37.5
10	Smokers are often stressed.	55	49.1	35	31.3	10	8.9	12	10.7

11	Non-smokers should be proud to be smoke free.	70	62.5	13	11.6	17	15.1	12	10.7
----	---	----	------	----	------	----	------	----	------

449